

**X(10610) $^\pm$** 

$I^G(J^P) = ?^+(1^+)$

## OMITTED FROM SUMMARY TABLE

Observed by BONDAR 12 in  $\Upsilon(5S)$  decays to  $\Upsilon(nS)\pi^+\pi^-$  ( $n = 1, 2, 3$ ) and  $h_b(mP)\pi^+\pi^-$  ( $m = 1, 2$ ).  $J^P = 1^+$  is favored from angular analyses.

NODE=M207

**X(10610) $^\pm$  MASS**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>10607.2<math>\pm</math>2.0</b>	1 BONDAR	12 BELL	$e^+e^- \rightarrow$ hadrons
<b>• • •</b> We do not use the following data for averages, fits, limits, etc. <b>• • •</b>			
10611 $\pm 4$ $\pm 3$	2 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(1S)\pi^+\pi^-$
10609 $\pm 2$ $\pm 3$	2 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(2S)\pi^+\pi^-$
10608 $\pm 2$ $\pm 3$	2 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(3S)\pi^+\pi^-$
10605 $\pm 2$ $^{+3}_{-1}$	2 BONDAR	12 BELL	$e^+e^- \rightarrow h_b(1P)\pi^+\pi^-$
10599 $^{+6}_{-3}$ $^{+5}_{-4}$	2 BONDAR	12 BELL	$e^+e^- \rightarrow h_b(2P)\pi^+\pi^-$

<sup>1</sup> Average of the BONDAR 12 measurements in separate channels.<sup>2</sup> Superseded by the average measurement of BONDAR 12.

NODE=M207M

NODE=M207M

**X(10610) $^\pm$  WIDTH**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>18.4<math>\pm</math> 2.4</b>	3 BONDAR	12 BELL	$e^+e^- \rightarrow$ hadrons
<b>• • •</b> We do not use the following data for averages, fits, limits, etc. <b>• • •</b>			
22.3 $\pm$ 7.7 $^{+3.0}_{-4.0}$	4 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(1S)\pi^+\pi^-$
24.2 $\pm$ 3.1 $^{+2.0}_{-3.0}$	4 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(2S)\pi^+\pi^-$
17.6 $\pm$ 3.0 $\pm$ 3.0	4 BONDAR	12 BELL	$e^+e^- \rightarrow \Upsilon(3S)\pi^+\pi^-$
11.4 $^{+4.5}_{-3.9}$ $^{+2.1}_{-1.2}$	4 BONDAR	12 BELL	$e^+e^- \rightarrow h_b(1P)\pi^+\pi^-$
13 $^{+10}_{-8}$ $^{+9}_{-7}$	4 BONDAR	12 BELL	$e^+e^- \rightarrow h_b(2P)\pi^+\pi^-$

<sup>3</sup> Average of the BONDAR 12 measurements in separate channels.<sup>4</sup> Superseded by the average measurement of BONDAR 12.NODE=M207M;LINKAGE=BO  
NODE=M207M;LINKAGE=BN

NODE=M207W

NODE=M207W

**X(10610) $^+$  DECAY MODES** $X(10610)^-$  decay modes are charge conjugates of the modes below.

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \Upsilon(1S)\pi^+$	seen
$\Gamma_2 \Upsilon(2S)\pi^+$	seen
$\Gamma_3 \Upsilon(3S)\pi^+$	seen
$\Gamma_4 h_b(1P)\pi^+$	seen
$\Gamma_5 h_b(2P)\pi^+$	seen

NODE=M207225

NODE=M207R01  
NODE=M207R01NODE=M207R02  
NODE=M207R02NODE=M207R03  
NODE=M207R03**X(10610) $^\pm$  BRANCHING RATIOS**

$\Gamma(\Upsilon(1S)\pi^+)/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$
<b>seen</b>	BONDAR 12 BELL $e^+e^- \rightarrow \Upsilon(1S)\pi^+\pi^-$

$\Gamma(\Upsilon(2S)\pi^+)/\Gamma_{\text{total}}$	$\Gamma_2/\Gamma$
<b>seen</b>	BONDAR 12 BELL $e^+e^- \rightarrow \Upsilon(2S)\pi^+\pi^-$

$\Gamma(\Upsilon(3S)\pi^+)/\Gamma_{\text{total}}$	$\Gamma_3/\Gamma$
<b>seen</b>	BONDAR 12 BELL $e^+e^- \rightarrow \Upsilon(3S)\pi^+\pi^-$

$\Gamma(h_b(1P)\pi^+)/\Gamma_{\text{total}}$ 

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_4/\Gamma$
<b>seen</b>	BONDAR 12	BELL	$e^+ e^- \rightarrow h_b(1P)\pi^+\pi^-$	

NODE=M207R04  
NODE=M207R04 $\Gamma(h_b(2P)\pi^+)/\Gamma_{\text{total}}$ 

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_5/\Gamma$
<b>seen</b>	BONDAR 12	BELL	$e^+ e^- \rightarrow h_b(2P)\pi^+\pi^-$	

NODE=M207R05  
NODE=M207R05**X(10610) $^\pm$  REFERENCES**

BONDAR 12 PRL 108 122001

A. Bondar *et al.*

(BELLE Collab.)

NODE=M207

REFID=53963